

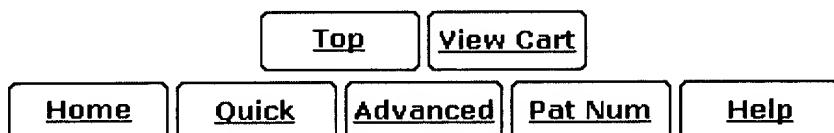
L Number	Hits	Search Text	DB	Time stamp
1	3	(("6,327,582") or ("5,946,674") or ("5,343,554")) .PN.	USPAT; US-PGPUB	2004/02/21 15:28

USPTO PATENT FULL-TEXT AND IMAGE DATABASE[Home](#)[Quick](#)[Advanced](#)[Pat Num](#)[Help](#)[Bottom](#)[View Cart](#)*Searching 1790 to present...***Results of Search in 1790 to present db for:****(("genetic algorithm" AND tree) AND lisp): 28 patents.***Hits 1 through 28 out of 28*[Jump To](#)[Refine Search](#)["genetic algorithm" and tree and lisp](#)

PAT. NO. Title

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- 3 [6,571,226](#) **Method and apparatus for automated design of chemical synthesis routes**
- 4 [6,564,194](#) **Method and apparatus for automatic synthesis controllers**
- 5 [6,532,453](#) **Genetic programming problem solver with automatically defined stores loops and recursions**
- 6 [6,493,686](#) **Computer implemented machine learning method and system including specifically defined introns**
- 7 [6,449,603](#) **System and method for combining multiple learning agents to produce a prediction method**
- 8 [6,424,959](#) **Method and apparatus for automatic synthesis, placement and routing of complex structures**
- 9 [6,360,191](#) **Method and apparatus for automated design of complex structures using genetic programming**
- 10 [6,327,582](#) **Method and system for genetic programming**
- 11 [6,128,607](#) **Computer implemented machine learning method and system**
- 12 [6,098,059](#) **Computer implemented machine learning method and system**
- 13 [6,088,510](#) **Computer system and method for generating and mutating objects by iterative evolution**
- 14 [6,058,385](#) **Simultaneous evolution of the architecture of a multi-part program while solving a problem using architecture altering operations**
- 15 [5,946,674](#) **Turing complete computer implemented machine learning method and system**

- 16 5,946,673 **Computer implemented machine learning and control system**
- 17 5,930,780 **Distributed genetic programming**
- 18 5,867,397 **Method and apparatus for automated design of complex structures using genetic programming**
- 19 5,841,947 **Computer implemented machine learning method and system**
- 20 5,742,738 **Simultaneous evolution of the architecture of a multi-part program to solve a problem using architecture altering operations**
- 21 5,701,400 **Method and apparatus for applying if-then-else rules to data sets in a relational data base and generating from the results of application of said rules a database of diagnostics linked to said data sets to aid executive analysis of financial data**
- 22 5,390,282 **Process for problem solving using spontaneously emergent self-replicating and self-improving entities**
- 23 5,343,554 **Non-linear genetic process for data encoding and for solving problems using automatically defined functions**
- 24 5,249,259 **Genetic algorithm technique for designing neural networks**
- 25 5,148,513 **Non-linear genetic process for use with plural co-evolving populations**
- 26 5,140,530 **Genetic algorithm synthesis of neural networks**
- 27 5,136,686 **Non-linear genetic algorithms for solving problems by finding a fit composition of functions**
- 28 4,935,877 **Non-linear genetic algorithms for solving problems**





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1 Evolutionary learning of graph layout constraints from examples

Toshiyuki Masui

November 1994 Proceedings of the 7th annual ACM symposium on User interface

Full text available: pdf(586.25 KB)

Additional Information: full citation, abstract, references

We propose a new evolutionary method of extracting user preferences from exa layout system. Using stochastic methods such as simulated annealing and genet can find a good layout using an evaluation function which can calculate how goo evaluation function is usually not known beforehand, and it might vary from use system several pairs of good and ba ...

Keywords: adaptive user interface, genetic algorithms, genetic programming, gr programming by example

2 Artificial evolution for computer graphics

Karl Sims

July 1991 ACM SIGGRAPH Computer Graphics , Proceedings of the 18th annual conf interactive techniques, Volume 25 Issue 4

Full text available: pdf(8.74 MB)

Additional Information: full citation, references, citing:

3 Designing laboratory modules for novices in an undergraduate AI course tr

Robert M. Aiken, Dean Allemand, Thomas Wehrle

March 1992 ACM SIGCSE Bulletin , Proceedings of the twenty-third SIGCSE technical education, Volume 24 Issue 1

Full text available:  pdf(446.93 KB)

Additional Information: full citation, abstract, references, citi

A current joint project between three institutions in Switzerland has as its goal to software in teaching principles of AI at the University level. The modules of this illustrate basic concepts of Artificial Intelligence in a uniform and self-contained considerations that were adopted in order to make the presentation of this mate

4 Data clustering: a review

A. K. Jain, M. N. Murty, P. J. Flynn

September 1999 ACM Computing Surveys (CSUR), Volume 31 Issue 3

Full text available:  pdf(636.24 KB)

Additional Information: full citation, abstract, references, citi

Clustering is the unsupervised classification of patterns (observations, data item (clusters). The clustering problem has been addressed in many contexts and by reflects its broad appeal and usefulness as one of the steps in exploratory data problem combinatorially, and differences in assumptions and contexts in differer useful generic co ...

Keywords: cluster analysis, clustering applications, exploratory data analysis, in unsupervised learning

5 Machine learning in the liberal arts curriculum

Clare Bates Congdon

March 2000 ACM SIGCSE Bulletin , Proceedings of the thirty-first SIGCSE technical education, Volume 32 Issue 1

Full text available:  pdf(461.16 KB)

Additional Information: full citation, abstract, references, citi

Machine learning is typically considered a graduate-level course with an artificial However, it does not need to be positioned this way, and in the liberal arts curri to offering this course to undergraduate students. An undergraduate course in n structured to introduce research concepts and to work within a research paradigm refle ...

6 AGENTS: a distributed client-server system for leaf cell generation

Dilvan de Abreu Moreira, Les T. Walczowski

January 1997 *ACM Transactions on Design Automation of Electronic Systems (TOD*

Full text available:  pdf(727.66 KB)

Additional Information: full citation, abstract, references, citing

The AGENTS system is a set of programs designed to generate automatically the BICMOS, and bipolar leaf cells. The system is formed from four sever programs: broker. The placer places components in a cell, the router wires the circuits sent information that is dependent upon the fabrication process, such as the design rules of the other serv ...

Keywords: client/server model, genetic algorithms, software agents

7 Book reviews

December 1999

Artificial intelligence, Volume 10 Issue 4

Full text available:  pdf(385.82 KB)  html(66.61 KB) Additional Information: full citation, references, index to

8 Meta optimization: improving compiler heuristics with machine learning

Mark Stephenson, Saman Amarasinghe, Martin Martin, Una-May O'Reilly

May 2003 *ACM SIGPLAN Notices , Proceedings of the ACM SIGPLAN 2003 conference on Implementation, Volume 38 Issue 5*

Full text available:  pdf(302.23 KB)

Additional Information: full citation, abstract, references, citing

Compiler writers have crafted many heuristics over the years to approximately solve a problem. Finding a heuristic that performs well on a broad range of applications is a tedious and error-prone task. Meta Optimization, a methodology for automatically fine-tuning compiler heuristics, uses machine-learning techniques to automatically search the space of compiler heuristics to find a good design complexity by relieving compiler writers of the task of ...

Keywords: compiler heuristics, genetic programming, machine learning, priority

9 Efficient handling of multiple inheritance hierarchies

Yves Caseau

October 1993 *ACM SIGPLAN Notices , Proceedings of the eighth annual conference on Object-oriented languages, and applications, Volume 28 Issue 10*

Full text available:  pdf(1.63 MB)

Additional Information: full citation, references, citing

10 Enhancing information retrieval by automatic acquisition of textual relations

Agneta Bergström, Patricija Jaksetic, Peter Nordin

January 2000 Proceedings of the 5th international conference on Intelligent user

Full text available:  pdf(633.96 KB)

Additional Information: full citation, abstract, references

We have explored a novel method to find textual relations in electronic documents using semantic networks. This can be used for enhancing information retrieval and significance extraction of relations from text enables easier updating of electronic dictionaries. The search input and hit output on small screens such as cell phones and PDAs (Personal Digital Assistants) is also discussed.

Keywords: genetic programming, information retrieval, machine learning, natural language processing, semantic networks

11 Evolving virtual creatures

Karl Sims

July 1994 Proceedings of the 21st annual conference on Computer graphics and interactive techniques

Full text available:  pdf(84.65 KB)  ps(219.40 KB)

Additional Information: full citation, abstract, references

This paper describes a novel system for creating virtual creatures that move and interact with physical worlds. The morphologies of creatures and the neural systems for controlling them are generated automatically using genetic algorithms. Different fitness evaluation functions drive the evolutions towards specific behaviors such as swimming, walking, jumping, and climbing. The system that uses no ...

12 Knowledge-based document retrieval in office environments: the Kabiria system

Augusto Celentano, Maria Grazia Fugini, Silvano Pozzi

July 1995 ACM Transactions on Information Systems (TOIS), Volume 13 Issue 1

Full text available:  pdf(2.14 MB)

Additional Information: full citation, abstract, references, citing

In the office environment, the retrieval of documents is performed using the context information about the procedural context where the documents are used, and in that discipline the life of documents within a given application domain. To fulfill the retrieval, we propose a document retrieval model and system based on the representation of semantic contents of documents ...

Keywords: browser, class, hypertext, instance, knowledge base, link, object oriented, semantic web

13 A weighted coding in a genetic algorithm for the degree-constrained minimum spanning tree
Günther R. Raidl, Bryant A. Julstrom
March 2000 Proceedings of the 2000 ACM symposium on Applied computing
Full text available: [pdf](#)(499.35 KB) Additional Information: full citation, references, citations, index terms

Keywords: degree-constrained minimum spanning trees, genetic algorithms, weighted coding, degree-constrained minimum spanning tree

14 Designing telecommunications networks using genetic algorithms and probability theory
Faris N. Abuali, Dale A. Schoenefeld, Roger L. Wainwright
April 1994 Proceedings of the 1994 ACM symposium on Applied computing
Full text available: [pdf](#)(567.60 KB) Additional Information: full citation, references, citations, index terms

15 Solving the three-star tree isomorphism problem using genetic algorithms
Faris N. Abuali, Roger L. Wainwright, Dale A. Schoenefeld
February 1995 Proceedings of the 1995 ACM symposium on Applied computing
Full text available: [pdf](#)(861.60 KB) Additional Information: full citation, references, citations, index terms

16 Session 5: university education: The development and operation of edinburgh's summer scholarship programme
G. V. Wilson, N. B. MacDonald, C. Thornborrow, C. M. Brough
November 1994 Proceedings of the 1994 ACM/IEEE conference on Supercomputing
Full text available: [pdf](#)(944.30 KB) Additional Information: full citation, abstract, references, citations, index terms

Between 1987 and 1994, more than 100 students in a broad range of disciplines at the Edinburgh Parallel Computing Centre. Many of these students have since taken up graduate work and industry, and over a quarter of EPCC's technical staff are alumnus. This paper describes the evolution and present operation of the Summer Scholarship Programme.

17 IS '97: model curriculum and guidelines for undergraduate degree programs
Gordon B. Davis, John T. Gorgone, J. Daniel Couger, David L. Feinstein, Herbert E. Hartman
December 1997 ACM SIGMIS Database , Guidelines for undergraduate degree programs in information systems, Volume 1, Number 1
Full text available: [pdf](#)(7.24 MB) Additional Information: full citation, abstract, references, citations, index terms

18 Context-sensitive interprocedural points-to analysis in the presence of func

Maryam Emami, Rakesh Ghiya, Laurie J. Hendren

June 1994 ACM SIGPLAN Notices , Proceedings of the ACM SIGPLAN 1994 conference on Implementation, Volume 29 Issue 6

Full text available:  pdf(1.74 MB)

Additional Information: full citation, abstract, references, cit

This paper reports on the design, implementation, and empirical results of a new problem in C. The method is based on approximating the points-to relationships can be used to generate alias pairs, or used directly for other analyses and transform context-sensitive interprocedural information based on analysis over invocation including re ...

19 What have we learnt from using real parallel machines to solve real problems

G. C. Fox

January 1989 Proceedings of the third conference on Hypercube concurrent comput

Full text available:  pdf(4.08 MB)

Additional Information: full citation, abstract, references, cit

We briefly review some key scientific and parallel processing issues in a selection of parallel machines. We include the MIMD hypercube transputer array, BBN Butte MPP and Connection Machine from Thinking Machines. We use a space-time analysis division into synchronous, loosely synchronous and asynchronous problems is highly suitable for SIMD or MIMD ...

20 Strategy game programming projects

Timothy Huang

April 2001 The Journal of Computing in Small Colleges , Proceedings of the sixth annual The journal of computing in small colleges, Volume 16 Issue 4

Full text available:  pdf(208.83 KB)

Additional Information: full citation, abstract, references, cit

In this paper, we show how programming projects centered around the use of computer players for strategy games can play a meaningful role both in and out of the classroom. We describe several game-related projects author in a variety of pedagogical situations, including introductory as independent and collaborative research projects. These projects can and develop advanced data ...

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21 Minimizing row displacement dispatch tables

Karel Driesen, Urs Hözle

October 1995 ACM SIGPLAN Notices , Proceedings of the tenth annual conference on languages, and applications, Volume 30 Issue 10

Full text available: pdf(1.81 MB)

Additional Information: full citation, abstract, references, c

Row displacement dispatch tables implement message dispatching for dynamica overhead of one memory indirection plus an equality test. The technique is simil is, however, restricted to statically typed languages like C++. We show how to i tables to approximately the same size as virtual function tables. The scheme is i Experiments on a numbe ...

22 Three-phase chip planning — an improved top-down chip planning s

Bernd Schürmann, Joachim Altmeyer, Gerhard Zimmermann

November 1992 Proceedings of the 1992 IEEE/ACM international conference on Com

Full text available: pdf(980.54 KB)

Additional Information: full citation, references, citations, index te

23 Word sense disambiguation using machine-readable dictionaries

R. Krovetz, W. B. Croft

May 1989 ACM SIGIR Forum , Proceedings of the 12th annual international ACM SIGIR development in information retrieval, Volume 23 Issue 1-2

Full text available:  pdf(1.06 MB)

Additional Information: full citation, references, citing:

24 Exploring knowledge acquisition tools for a veterinary medical expert system

M. McLeish

June 1988 Proceedings of the first international conference on Industrial and engineering and expert systems - Volume 2

Full text available:  pdf(679.12 KB)

Additional Information: full citation, references

25 Supporting compositional reuse in component-based Web engineering

Martin Gaedke, Jörn Rehse

March 2000 Proceedings of the 2000 ACM symposium on Applied computing

Full text available:  pdf(701.38 KB)

Additional Information: full citation, references, index terms

Keywords: WebComposition, component retrieval, pattern, repository, reuse

26 Evolutionary computing and optimization: A spanning-tree-based genetic algorithm for the rectilinear Steiner problem with obstacles

Rita M. Hare, Bryant A. Julstrom

March 2003 Proceedings of the 2003 ACM symposium on Applied computing

Full text available:  pdf(540.11 KB)

Additional Information: full citation, abstract,

Given sets of points and obstacles in the plane, the rectilinear Steiner problem is to find a rectilinear Steiner tree---a tree made up of vertical and horizontal line segments---that connects all the points with a minimum total length. We consider only rectangular obstacles and further restrict the problem by requiring that every point be connected to the tree via exactly one vertical and one horizontal line segment. That is, no point may have more than two incident edges. We propose a genetic algorithm for this problem. The algorithm uses a spanning-tree-based representation and a local search operator that preserves the spanning-tree property. The search space is highly multimodal, and the local search operator is able to escape from local optima. The algorithm is able to find near-optimal solutions for problems with up to 100 points and 10 obstacles. The results are compared with those obtained by other evolutionary algorithms and a branch-and-bound algorithm.

Keywords: Rectilinear Steiner problem, genetic algorithms, obstacles, spanning

27 An efficient LISP-execution architecture with a new representation for list structures

Gurindar S. Sohi, Edward S. Davidson, Janak H. Patel

June 1985 ACM SIGARCH Computer Architecture News , Proceedings of the 12th annual Computer architecture, Volume 13 Issue 3

Full text available:  pdf(790.49 KB)

Additional Information: full citation, citings, i

28 Compact Storage of Binary Trees

Paolo Sipala

July 1982 ACM Transactions on Programming Languages and Systems (TOPLAS), V

Full text available:  pdf(820.48 KB)

Additional Information: full citation, references, index terms

29 An optimizing compiler for lexically scoped LISP

Rodney A. Brooks, Richard P. Gabriel, Guy L. Steele

June 1982 ACM SIGPLAN Notices , Proceedings of the 1982 SIGPLAN symposium on
6Full text available:  pdf(1.37 MB)

Additional Information: full citation, abstract, references, c

We are developing an optimizing compiler for a dialect of the LISP language. This multiprocessor supercomputer designed at Lawrence Livermore National Laboratory is a language primarily for symbolic processing and list manipulation, this compiler is faster than PASCAL and FORTRAN compilers for quality of compiled numerical code. The S-100 is a signal processing ...

30 Determinant factorization and cycle basis: encoding schemes for the representation of incomplete graphs

Faris N. Abuali, Roger L. Wainwright, Dale A. Schoenefeld

February 1995 Proceedings of the 1995 ACM symposium on Applied computing

Full text available:  pdf(818.45 KB)

Additional Information: full citation, references, citings, i

31 Papers: novel input, output, and computation: Dynamic approximation of constraints

Nathan Hurst, Kim Marriott, Peter Moulder

October 2002 Proceedings of the 15th annual ACM symposium on User interface s...

Full text available: pdf(397.65 KB)

Additional Information: full citation, abstract, references.

Current constraint solving techniques for interactive graphical applications cannot handle non-overlap, or containment within non-convex shapes or shapes with smooth edges. We propose a new technique for efficiently handling such kinds of constraints based on trust region optimization. Our approach is to model these more complex constraints by a dynamically changing set of linear constraints. At each stage, these give us a linear approximation of the original constraint, which is then solved using a standard linear programming solver.

Keywords: constraint-solving, containment, direct manipulation, linearization of

32 Adaptive operator probabilities in a genetic algorithm that applies three operators

Bryant A. Sjastrem
April 1997 Proceed

Full-text available: [pdf\(180.86 KB\)](#) Additional Information: full citation, references, index

Full text available: [pdf \(489.00 KB\)](#)

Additional information: full citation, references, index terms

Keywords: adaptive operator probabilities, more than two operators, rectilinear

33 Shallow binding in Lisp 1.5

Henry G. Baker

July 1978

Communications of the ACM, Volume 21 Issue 7

Full text available: pdf(492.14 KB)

Additional Information: full citation, abstract, references,

Shallow binding is a scheme which allows the value of a variable to be accessed elegantly. An elegant model for shallow binding in Lisp 1.5 is presented in which context-switching is implemented by a transformation called rerooting. Rerooting is completely general and reversible, so that a Lisp 1.5 interpreter will operate correctly whether or not rerooting is invoked on every association `assoc [v, a]`.

Keywords: Algol display, FUNARG's, Lisp 1.5, deep binding, environment tr binding

34 Topological design of local-area networks using genetic algorithms

Reuven Elbaum, Moshe Sidi

October 1996 IEEE/ACM Transactions on Networking (TON), Volume 4 Issue 5

Full text available: pdf(1.32 MB)

Additional Information: full citation, references, index terms

35 MULTI - a LISP based multiprocessing system

Donald P. McKay, Stuart C. Shapiro

Proceedings of the 1980 ACM conference on LISP and functional pr

Full text available:  pdf(853.68 KB)

Additional Information: full citation, abstract, references

A package of LISP functions, collectively called MULTI, which extends LISP 1.5 to defines the notion of a process within a LISP implementation using function invocation. A process is an executable entity consisting of a process template and a set of regular expressions defining the operations the process carries out. Process environments are saved in what is called a process file, i.e. LISP file.

36 A critique of common LISP

Rodney A. Brooks, Richard P. Gabriel

August 1984 Proceedings of the 1984 ACM Symposium on LISP and functional programming

Full text available: pdf(741.87 KB)

Additional Information: full citation, abstract, references.

A major goal of the COMMON LISP committee was to define a Lisp language with people would be happy to stay within its confines and thus write inherently transparent code. The resulting language definition is too large for many short-term and medium-term parts of COMMON LISP cannot be implemented very efficiently on stock hardware. The generality of the design with its different ...

37 Seeding the population: improved performance in a genetic algorithm for th

Bryant A. Julstrom

April 1994 Proceedings of the 1994 ACM symposium on Applied computing

Full text available: pdf(484.27 KB)

Additional Information: full citation, references, inde

Keywords: combinatorial optimization, genetic algorithms, rectilinear Steiner problem

38 Queue-based multi-processing LISP

Richard P. Gabriel, John McCarthy

Proceedings of the 1984 ACM Symposium on LISP and functional p

Full text available:  pdf(1.22 MB)

Additional Information: full citation, abstract, references, c

As the need for high-speed computers increases, the need for multi-processors major stumbling blocks to the development of useful multi-processors has been language—one which is both powerful and understandable to programme programs are artificial intelligence (AI) programs, and researchers hope that the programs is higher th ...

39 Flow analysis and optimization of LISP-like structures

Neil D. Jones, Steven S. Muchnick

January 1979 Proceedings of the 6th ACM SIGACT-SIGPLAN symposium on Principles

Full text available:  pdf(964.87 KB)

Additional Information: full citation, abstract, refe

In [12] the authors introduced the concept of binding time optimization and presented methods for determining some of the binding time characteristics of programs. They provide methods for determining the class of shapes which an unbounded data structure can assume in a LISP-like program, and describe a number of uses to which that information might be put by compilers and interpreters for ...

40 Mathematical programming in a hybrid genetic algorithm for Steiner point p

David J. Thuente, Pulin Sampat

February 1995 Proceedings of the 1995 ACM symposium on Applied computir

Full text available:  pdf(763.80 KB)

Additional Information: full citation, references.

Keywords: Quasi-Newton method, Steiner points, genetic algorithm, heuristic optimization, global optimization.

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41 A hybrid genetic algorithm for the point to multipoint routing problem with si

Pablo Galiasso, Roger L. Wainwright

March 2001 Proceedings of the 2001 ACM symposium on Applied computing

Full text available: pdf(84.61 KB)

Additional Information: full citation, references, index term

Keywords: Steiner trees, genetic algorithm, point to multipoint routing, telecom

42 Design of a LISP-based microprocessor

Guy Lewis Steele, Gerald Jay Sussman

November 1980

Communications of the ACM, Volume 23 Issue 11

Full text available: pdf(1.89 MB)

Additional Information: full citation, abstract, referer

We present a design for a class of computers whose "instruction sets" are traditional stored-program machine languages and unlike most high-level languages, data in the same way and explicitly allows programs to be manipulated as data, stored-program computer architecture. LISP differs from traditional machine languages in that it is conceptually an unordered set of ...

Keywords: LISP, SCHEME, VLSI, direct execution, garbage collection, high-level circuits, interpreters, large-scale integration, linked lists, list structure, microprocessor, recursion

43 A simple interprocedural register allocation algorithm and its effectiveness

Peter A. Steenkiste, John L. Hennessy

January 1989 *ACM Transactions on Programming Languages and Systems (TOPLA)*

Full text available:  pdf(2.56 MB)

Additional Information: full citation, abstract, references, citing

Register allocation is an important optimization in many compilers, but with per-
not possible to make good use of a large register set. Procedure calls limit the ir
allocation, since they force variables allocated to registers to be saved and restc
LISP programs due to the higher frequency of procedure calls. An interprocedur
developed by simp ...

44 A comparison of list-processing computer languages: including a detailed c

1.5, and SLIP

Daniel G. Bobrow, Bertram Raphael

April 1964 *Communications of the ACM, Volume 7 Issue 4*

Full text available:  pdf(1.01 MB)

Additional Information: full citation, references, citings,

45 N-group classification using genetic algorithms

Aaron H. Konstam

April 1994 *Proceedings of the 1994 ACM symposium on Applied computing*

Full text available:  pdf(584.82 KB) Additional Information: full citation, references, citings, index terms

Keywords: classification, genetic algorithms, linear discriminant functions

46 Using genetic algorithms to generate Steiner triple systems

Stephen J. Hartley, Aaron H. Konstam

March 1993 *Proceedings of the 1993 ACM conference on Computer science*

Full text available:  pdf(748.43 KB)

Additional Information: full citation, abstract, references,

Steiner systems, particularly triple systems, are usually generated by mathemat
groups and quasi-groups. When pencil-and-paper enumeration becomes infeasit
to carry out exhaustive searches. This paper presents some results of using gen
exhaustive search, to generate Steiner systems. A specialized mutation operato
systems. Future researc ...

47 An interpreter generator using tree pattern matching

Christoph M. Hoffmann, Michael J. O'Donnell

January 1979 Proceedings of the 6th ACM SIGACT-SIGPLAN symposium on Principles

Full text available:  pdf(852.20 KB)

Additional Information: full citation, abstract, references, citings

Equations provide a rich, intuitively understandable notation for describing nonprocedural LISP and Lucid. In this paper, we present techniques for automatically generating programs to well-known techniques for generating parsers from context-free grammars. The approach is faithful to the simple traditional mathematical meaning of the equations-no lattice or tree to explain the correspondence ...

48 Design of an optimizing, dynamically retargetable compiler for common LISP

Rodney A. Brooks, David B. Posner, James L. McDonald, Jon L. White, Eric Benson

August 1986 Proceedings of the 1986 ACM conference on LISP and functional programming

Full text available:  pdf(1.13 MB)

Additional Information: full citation, references, citings

49 Speeding up Lisp-based symbolic mathematics

Richard J. Fateman, Mark Hayden

March 1996 ACM SIGSAM Bulletin, Volume 30 Issue 1

Full text available:  pdf(1.15 MB)

Additional Information: full citation, abstract, references, citings

Two techniques for speeding up a traditional Lisp-based symbolic manipulation system are presented. The first is a generalization of a technique presented in a previous paper [2]. These were: using unique representations for equivalent "keyforms" (expressions that are not basically anything but a sum), and using hash tables for an unordered representation of expressions. The second is a modification of a complete version of Macsyma to use hash tables. Preliminary experiments with a complete version of Macsyma suggest that a speedup of 10-15 times is possible in some cases --- in some cases this appears to be a factor of 100 times ...

50 Experiments with the M & N tree-searching program

James R. Slagle, John K. Dixon

March 1970 Communications of the ACM, Volume 13 Issue 3

Full text available:  pdf(896.52 KB)

Additional Information: full citation, abstract, references, citings

The M & N procedure is an improvement to the mini-max backing-up procedure for game-playing and other purposes. It is based on the principle that it is desirable to assign to a node the value of the best decision in the face of uncertainty. The mini-max procedure assigns to a MAX (MIN) valued successor to that node. The M & N procedure assigns to a MAX (MIN) valued successor the value of the best decision ...

Keywords: LISP, artificial intelligence, backing-up procedures, decision theory, game playing, min-max backing-up procedure, tree searching

51 Programming in an Interactive Environment: the ``Lisp" Experience

Erik Sandewall

January 1978 *ACM Computing Surveys (CSUR)*, Volume 10 Issue 1Full text available:  pdf(3.25 MB) Additional Information: full citation, references, citings, index terms**52 Canonical representations in Lisp and applications to computer algebra sys**

Richard J. Fateman

June 1991 *Proceedings of the 1991 international symposium on Symbolic and algeb*Full text available:  pdf(1.11 MB)

Additional Information: full citation, references, index terms

53 Subtree replacement systems: A unifying theory for recursive equations, LI

Mike O'Donnell

May 1977 *Proceedings of the ninth annual ACM symposium on Theory of compl*Full text available:  pdf(782.24 KB)

Additional Information: full citation, abstract, references

Recent work on computation of functions defined by sets of recursive equations Downey and Sethi [DS76] depends on semantic interpretations of such equations. This approach yields similar results for a much wider class of sets of equations, including the Lucid and the combinator calculus. The application to LISP proves several conjectures.

54 A transputer-based parallel Lisp implementation

M. D. Feng, C. K. Yuen

April 1992 *Proceedings of the 1992 ACM annual conference on Communications*Full text available:  pdf(816.59 KB)

Additional Information: full citation, references, index terms

Keywords: parallel Lisp, speculative processing, transputer, tuple space

55 Prolog - the language and its implementation compared with Lisp

David H D Warren, Luis M. Pereira, Fernando Pereira

August 1977 *Proceedings of the 1977 symposium on Artificial intelligence and programing*
64Full text available:  pdf(670.37 KB)

Additional Information: full citation, abstract, references

Prolog is a simple but powerful programming language founded on symbolic logic. It uses a pattern matching process ("unification") operating on general relations (logic). We briefly review the language and compare it especially with pure Lisp. We then discuss various techniques for implementing Prolog efficiently; in particular we describe how to implement the pattern matching process. These ...

56 P-tree classification of yeast gene deletion data

Amal Perera, Anne Denton, Pratap Kotala, William Jockheck, Willy Valdivia Granda, December 2002 ACM SIGKDD Explorations Newsletter, Volume 4 Issue 2

Full text available:  pdf(37.80 KB)

Additional Information: full citation, abstract, references, citations, index

Genomics data has many properties that make it different from "typical" relational attributes as well as the large number of null values led us to a P-tree-based bit 1-values were counted to evaluate similarity between genes. Quantitative information was also included in the classifier. Interaction information allowed us to extend the information on i ...

Keywords: P-tree, bioinformatics, data mining, genetic algorithm, genomics

57 Evolutionary computing and optimization: Initialization is robust in evolution trees as sets of edges

Bryant A. Julstrom, Günther R. Raidl

March 2002 Proceedings of the 2002 ACM symposium on Applied computing

Full text available:  pdf(542.67 KB)

Additional Information: full citation, abstract, references, citations, index

Evolutionary algorithms (EAs) that search spaces of spanning trees can encode the case, edge-sets for an EA's initial population should represent spanning trees of the graph that underlies the target problem instance. However, the generation of random edge-sets might appear. Mechanisms based on Prim's and Kruskal's minimum spanning tree are uniform mechanisms are slow, ...

Keywords: initialization, random spanning trees, sets of edges, spanning trees

58 Experiments With Some Programs That Search Game Trees

James R. Slagle, John E. Dixon

April 1969 Journal of the ACM (JACM), Volume 16 Issue 2

Full text available:  pdf(1.14 MB)

Additional Information: full citation, abstract, references, citations, index

Many problems in artificial intelligence involve the searching of large trees of alternative game-playing and theorem-proving. The problem of efficiently searching large trees is dynamic ordering is described, and the older minimax and Alpha-beta comparison purposes. Performance figures are given for six variations of the game and depth ratio is determined ...

59 Is it a tree, a DAG, or a cyclic graph? A shape analysis for heap-directed programs

Rakesh Ghaiya, Laurie J. Hendren

January 1996 Proceedings of the 23rd ACM SIGPLAN-SIGACT symposium on Principles of programming languages

Full text available:  pdf(1.51 MB)

Additional Information: full citation, references, citations, index

60 A bidirectional data driven Lisp engine for the direct execution of Lisp in pa

C. K. Yuen, W. F. Wong

June 1989 ACM SIGARCH Computer Architecture News, Volume 17 Issue 4

Full text available:  pdf(761.13 KB)

Additional Information: full citation, index terms

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 Check to search within this result set**Results Key:****JNL** = Journal or Magazine **CNF** = Conference **STD** = Standard**1 Two fast tree-creation algorithms for genetic programming***Luke, S.;*

Evolutionary Computation, IEEE Transactions on , Volume: 4 , Issue: 3 , Sept. 2000

Pages:274 - 283

[\[Abstract\]](#) [\[PDF Full-Text \(300 KB\)\]](#) **IEEE JNL****2 Genetic programming of fuzzy logic production rules***Edmonds, A.N.; Burkhardt, D.; Adjei, O.;*

Evolutionary Computation, 1995., IEEE International Conference on , Volume: 2 , 29 Nov.-1 Dec. 1995

Pages:765 - 770 vol.2

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